Aleutian Disease in Mink

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Factsheet

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INTRODUCTION

Aleutian disease (AD) was first described in farm-raised mink in 1956. The disease was so named because it was first found in mink with the Aleutian coat colour gene. It has since been demonstrated that all colour phases of mink are susceptible to the disease, however, marked differences in the average severity of the disease have been noted. The disease is recognized throughout the world and is presently the most important infectious disease affecting farm-raised mink.

CAUSE

Aleutian disease is caused by a virus belonging to the family *Parvoviridae*.

TRANSMISSION

The virus is present in the blood, bone marrow, spleen, feces, urine and saliva of infected mink. The disease can be transmitted to healthy mink directly by contact with infected mink or indirectly by contamination of feed, water, equipment or clothing with the feces, urine or saliva of infected mink. Since the virus is present in the blood of infected mink, fleas are likely capable of transmitting the virus to other animals. An important means of transmission of the infection is from the female to her kits.

DISEASE

Aleutian disease progresses slowly, taking up to one year before the mink manifests any symptoms. Throughout this time, the infected mink is a source of the virus and can spread the disease to healthy mink. Characteristically, infected mink carrying the virus do not exhibit symptoms until several weeks or months after they become infected. Symptoms include loss of appetite, decreased activity, weight loss, tarry diarrhea and a rough coat. Once the symptoms become obvious, the death of the mink is certain.

A farm harbouring AD tends to lose a number of mink following extremes in environmental temperature. Deaths due to secondary infections are common because AD reduces the mink's ability to fight other infectious agents. Once the disease has spread to a large proportion of mink on a farm, kit production is drastically reduced due to "misses," abortions and early kit death. High kit mortality due to pneumonia is another less frequently recognized symptom of AD.

POSTMORTEM LESIONS

At postmortem, the spleen is markedly enlarged. The liver and lymph nodes are also often enlarged. The kidneys are enlarged, pale, yellow and mottled. The carcass is often tacky due to dehydration, resulting from kidney failure, which is often the cause of death.

DIAGNOSIS

Diagnosis of AD in the late stages of the disease can be made based on the history, postmortem and microscopic findings.

AD in live animals is diagnosed with a blood test — the counterimmunoelectrophoresis (CEP) test, which can also be done using blood drawn from the heart of dead animals. The CEP test is specific for AD and is capable of detecting antibodies to AD (positive CEP) one week after experimentally infecting a mink. The CEP test requires sophisticated laboratory equipment to conduct the test and trained personnel to interpret the results. At present, the CEP test is the most practical mass screening method available for the identification of AD-infected mink.

To test for AD, obtain the AD testing kit from the Animal Health Laboratory. A drop of blood in a capillary tube obtained by clipping a toenail of a mink is sufficient for the CEP test. The turnaround time is 2–7 days.

Ministry of Agriculture, Food and Rural Affairs

Ontario

To obtain test kits and to schedule testing, contact the Animal Health Laboratory, Laboratory Services Division, University of Guelph, Guelph, Ontario, N1G 2W1, 519-824-4120, ext. 54592.

TREATMENT

Since there is no specific treatment for AD, the detection of infected mink is extremely important for preventing further spread of the disease.

PREVENTION AND CONTROL

Positive animals must be detected and eliminated to prevent spread of the virus and disease.

Have your mink screened if the herd has not been previously tested for AD. Test a representative sample (5%–10%) of the breeding stock, sampling mink from every shed, colour phase and group on the farm.

An ideal time to test proposed breeders is just prior to pelting season (October or November) since all positives would automatically be pelted (culled). A retest of the negative mink kept as breeders just prior to breeding (March) further minimizes the chances of having AD-infected stock, since any previously negative mink now testing positive would not be used as breeders. It is especially important to test the breeder males prior to breeding season (March), since an infected male could potentially infect more than a dozen females during breeding season. It is also wise to test all barren females some time after whelping season (late April to early May) and prior to separation of the kits in July. Because some mink with very low levels of antibodies may undulate between positive and negative CEP test results, test frequently, if economically feasible.

Once a farm has initiated a testing program, do not bring new mink onto the farm without prior AD testing, isolate all new mink from the other animals and retest them after 30–60 days.

It has been demonstrated that the disease can be eliminated by strict culling of all mink that test positive for the AD antibody in the CEP test.

In addition, the following management practices can decrease the time it takes to control or even eradicate AD:

- Thoroughly clean and disinfect pens and nest boxes that have held AD-positive mink.
- Burn old bedding as well as fur adhering to the wire.
- Do not use high pressure sprayers, since they may aerosolize and spread the virus.
- Clean and disinfect the watering system.
- Remove and dispose of uneaten feed.
- Discourage the practice of spreading feed.
- Remove manure regularly.
- Reduce transmission through fly, bird and animal control.
- Restrict traffic on the farm — this may be aided by erecting a perimeter fence around the sheds.

If it is necessary to keep both negative and positive mink on the farm, keep them in separate sheds if possible. When handling mink, use separate gloves for negative and positive groups. Always work with negative mink first, whether feeding, vaccinating, grading or separating kits.

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